INDUSTRIAL NURSING

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Reports Are More Than Figures

ANYONE reading the Industrial Nurse's Report (page 566) might think that her daily routine is, indeed, a veritable "march of trivia." Only nurses long in industry know the implications for good or ill such figures as these reveal, and the wealth of human relationships that revolve around the activities they so briefly indicate.

Thus, for example, "First aid to 161 eye injuries," and "rechecks" on even the least of them, have meant the difference between light and darkness for some, and probably many, of the eyes involved. Eye injuries are never trivial, although they are so numerous and frequently seem so slight that they fail to receive the careful attention they warrant. We little appreciate that which we have never had to do without. Bandage your eyes for an hour and in that time take a bath, dress, and eat a meal. This will impress very forcibly the priceless-ness of vision, and the limited world in which one must live when it is gone. "If the eye bothers you at all come in again." "Let's see how it looks before you go home." "Be sure to come back in the morning when the doctor is here." These sentences are a standard part of the industrial nurse's attention to all minor eye injuries, and have helped to avoid serious consequences many, many times.

"Minor ailments — 596" means that the nurse has had 596 opportunities to discuss health and related problems with employees individually. There are no graphs by which to measure the scope of these discussions, for, as every industrial nurse knows, they often grow into long-time projects. And they can be related to a great deal of satisfactory living if one grasps the opportunities they offer.

"Home injuries 81—redressings 339" re-emphasizes the toll taken in the home by hazards which are so common that we disregard them. The industrial nurse is visited by the victims of many minor accidents which do not occur in the plant, injuries in the majority of cases not severe enough to take the patient to a doctor, but causing discomfort that can be greatly relieved by a little skilled attention. A very small scratch, cut or burn unattended may hurt just enough to make the worker's whole day go badly—and a bad day for the worker is always a bad day for production. Among these apparently minor injuries there are always a few which the nurse realizes are not as innocent as they appear, and the injured person is persuaded to see his doctor in time to avert serious complications.

"We have cared for 13,360 injuries without one case of infection." Such a record means two things. Employees have been taught the value of immediately reporting for care of even the smallest cuts, scratches, and burns — and the nurse knows well how to handle such cases in order to avoid introducing infection into wounds. Many burns and lacerations occur on jobs so dirty as to make the cleansing of the surrounding surface very difficult. Clean quarters, sterile supplies, and deft handling are absolutely essential to good results in all dressings and redressings. No injury is too insignificant to be handled with the greatest possible care to avoid contamination, and every case calls for at least one return visit to determine its course.

"Social service—69" means that in 69 instances among 279 employees there was need to draw upon community resources in some form in order to meet problems involving the health and security of workers or members of their families. The stories connected with these incidents are usually long and always interesting, and from the time the nurse hears one of them until the matter has been brought to a satisfactory conclusion through whatever means is indicated, the situation requires tact, ingenuity, and broad understanding on her part, as well as a willingness to devote as much of her time as necessary to details with which many persons would not be bothered.

There is a "heap of living" contained in any report of an industrial health department which is kept a guarded secret by the impersonal figures on the printed page.

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Occupational Dermatoses

—As Seen by the Industrial Nurse—

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THE subject of occupational dermatoses is a tremendous one; many books and countless articles have been published about it. It has been estimated that 70% or more of *all* industrial disease in the United States *is* occupational dermatitis.[1] Disability due to occupational dermatitis is increasing.[2] The rapid expansion of industry during our greatest war effort has emphasized the importance of this matter.

It is obviously impossible, in the limited time allowed, to cover the entire subject even in a cursory manner. Since this is the Nursing Section of your Conference, I shall attempt to approach the subject from the view point of the industrial nurse. A detailed discussion of all the specific skin irritants found in the industries of North Carolina would likewise require much more time than we have available. Consequently, I would like to limit my brief discussion to two of the more practical aspects of the matter, namely, (1) prevention, and (2) actual handling of the cases.

First, a definition of the term "occupational dermatosis" is in order. The officially recognized definition is "An occupational dermatosis is a pathological condition of the skin for which occupational exposure can be shown to be a major causal or contributory factor."[2]

Determining whether a given skin eruption is occupational or non-occupational in origin is often a very difficult problem even for the experienced dermatologist. The matter of diagnosis should always be left to the physician in charge, and it is usually wise to refrain from discussing the possibilities with the employee.

Prevention

MANY industrial plants are well equipped with engineering and safety devices designed to protect the workers from inhalation of poisonous fumes. In fact, Schwartz states that more attention has been paid to this matter than to the protection of the skin of the workers, "despite the fact that there is more time lost from work on account of occupational dermatitis than from any other occupational disease."[3] Many chemicals which irritate the skin may also affect the entire system; consequently, protecting the skin often protects the whole body. The variety of skin irritants encountered in our industries is so great that the same method of protection will not suit all exposures. One way in which the industrial nurse may make herself exceptionally valuable to her plant and to her fellow workers is to study the specific jobs of the employees she looks after and to observe whether the protection available is adhered to and whether it appears to be adequate for the exposure involved.

A. PRE-EMPLOYMENT EXAMINATIONS, more correctly termed "pre-placement" examinations, have proved to be well worth their cost where *proper* use of them has been made. The prevention of occupational dermatitis should begin with the pre-placement examination. Although this is not usually a function of the industrial nurse, I would like to cite a few examples to illustrate the point.

1. Persons with history of eczema or other chronic dermatitis, or presenting an active eczema at the time of employment, should not be placed on a job involving daily contact with known skin sensitizers, such as picrates, certain mercury compounds, some nitro compounds, and certain synthetic dyes.

2. Persons with marked acne vulgaris should not be exposed routinely to cutting oils, the solid chlorohydrocarbons, heavy coal-tar distillates, or crude petroleum.[3]

3. Persons with very dry skins should not be assigned jobs where frequent immersion of the hands in or cleaning the hands with volatile solvents is necessary.

4. The presence of fungous infections, such as common "athlete's foot," "ringworm," etc., should be noted. If the applicants are otherwise employable and the infection is not in an acute stage, they should be allowed to work but required to observe proper precautions to protect their fellow workers; treatment should also be required, and furnished at the plant when possible. Briefly, the best method of controlling common "athlete's foot" in a plant population is the use of thick soled wooden shower sandals in the locker rooms and showers, plus the use of a fungicidal foot powder.

In many plants pre-employment examinations are not done. In this circumstance, you may be able to accomplish a great deal by bringing these simple measures to the attention of the employment manager and obtaining his cooperation in the matter. Such procedures have been found to pay dividends by all those who have made good use of them.

B. CLEANLINESS: The proper cleansing of the skin is the most important and most effective preventive measure of all. Adequate washing facilities, showers, and lockers should be provided in a "change house" for all workers exposed to skin irritants.

The right cleanser for each job should be easily accessible and the employees instructed in its proper use. The ideal industrial cleanser, as defined by Schwartz:

1. "Should be freely soluble in hard, soft, cold, or hot water.

2. "Should remove foreign soil, fats, and oils without harming the skin.

3. "Should not contain harsh abrasives or irritant scrubbers.

4. "Should be handy to use in cake form, or should flow easily through soap dispensers if in granulated powder or liquid form," and

5. "Should not deteriorate or become insect-infested."[3]

Certain operations require special "indicator soaps" which indicate the presence of the chemical irritant by a color change (Example: Sulfite soaps for certain toluene derivatives.) During the winter months, it pays to provide employees with a superfatted soap, in order to help prevent dry skin, which is much more easily irritated than normal skin.

Workers who have an extremely sensitive skin should use a so-called "soapless cleanser" — commonly a neutral sulfonated castor oil with a wetting agent added. In the presence of an acute dermatitis, the use of any soap is contra-indicated. The skin should be cleansed with boric acid solution or olive oil.

C. PROTECTIVE CLOTHING: This includes gloves, uniforms, coveralls, aprons, caps, respirators, etc.

1. *In many operations,* properly designed protective clothing is the most effective means of preventing harmful skin exposure. The various types of protective garments and gloves are too numerous to list here; the choice depends naturally on the exposure involved, but may be limited by what is actually available; in this circumstance, a "second-choice" garment may or may not be better than none at all. Frequent laundering may help to solve the problem. For example: TNT dust may pass through closely woven cotton gloves to some extent; but if the gloves are laundered daily and issued fresh daily, the worker often ends up with more effective protection than if he wears the same pair of leather gloves every day for several months. It is usually best to have the plant launder its own protective clothing; the workers are loath to spend the

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money, and proper laundering can be enforced more easily if done under direct plant control.

2. *Long sleeves* on uniforms and work dresses will prevent "friction dermatitis" in jobs where workers sit at a table and some portion of the forearms routinely rubs the working surface, or part of a machine. This eruption may be brought out on any dry skin by sufficient mechanical irritation. Protective sleevelets are made for the same purpose. All sleeves should be made so that the wrist cuff can be fastened or drawn tight; this is to prevent the entrance and accumulation of dust inside the sleeve.

3. *Underclothes*: In jobs where considerable dust is present it may get to the underclothes even through a protective uniform or coveralls. The exposure to the irritating dust is, therefore, continued at home unless the worker keeps, or is provided with, a separate set of underclothes to be worn while on the job.

4. *Gloves*: Should have no coarse seams, should reach well above the wrists, and preferably be worn under impervious sleeves.[3]

5. *Aprons*: Should extend up to the neck and below the knees; they are of special value in protection from cutting oils.[3]

All protective clothing should be cleaned daily.

D. PROTECTIVE OINTMENTS: Generally speaking, this is the least dependable and least satisfactory method of protection. However, it may be the only available method of protection in certain cases. Protective creams or ointments are particularly useful on the face and neck, which cannot easily be covered with protective clothing, and on the hands in operations which cannot be satisfactorily performed when wearing gloves. Routine, large scale use of this measure is seldom practical or feasible. It is sometimes of considerable value in protecting irritated skin, or a skin which has broken out and is healing.

When a protective ointment is used, it should be washed off with soap and water at lunch time and at the end of the working shift. This promotes regular washing, and any irritants which might be present on the skin are removed at the same time. The varieties of protective ointments are too numerous to discuss in detail here; briefly the main types are:

1. A simple vanishing cream which fills the pores and thus facilitates the removal of dirt.

2. Ointments which coat the skin with a film of resin or wax, or a harmless fat, and thus repel irritants from the skin.

3. Ointments which contain a detoxifying chemical (usually an oxidizing agent such as sodium perborate) which is supposed to neutralize the irritant chemically.

4. The so-called "invisible glove" type which forms a protective covering by using an inert powder such as calamine, zinc oxide, iron oxide, etc.[4]

The choice again depends on the exposure involved. A complete list of the trade names and the chemical nature of protective ointments and industrial cleansers has been published by Schwartz.[4]

One other important point in the matter of cleanliness is the necessity for "good housekeeping" in industrial plants. Floors, walls, and ceilings of rooms in which skin irritants are handled should be wet cleaned at least once each shift, sometimes oftener, depending on the operation.

Handling of the Actual Cases

THE industrial nurse is usually the first person to treat the employee who presents a dermatitis. (I use the term dermatitis to mean *any* skin eruption.) Her duties are:

A. FIRST, to render treatment which will give the patient some relief from his annoying symptoms until he can be seen by a physician.

1. *Cleansing*: The first step in treatment should be to remove as much as possible of the suspected irritant from the skin, provided the condition of the skin will tolerate washing. In most cases the skin may be washed gently but thoroughly with a mild soap and water. Always avoid the use of strong, medicated soaps; in cases where the skin is defatted and dry, the use of a superfatted soap (such as Basis soap, Lanolin soap, Lanokleen, etc.) is advisable. Special industrial chemicals may require specific neutralization. Certain explosive powders are more effectively neutralized and removed by a soap containing sodium or potassium sulfite. (It should be remembered here that the normal skin surface is "acid" and will tolerate a fair amount of alkali and that plain water in sufficient quantity will dilute many irritant chemicals to a safe point.) The point is to make a careful study of the irritants in your own plant and then obtain the proper cleansing agent and see that it is made freely accessible.

If the patient works in a dusty operation and presents a generalized eruption which may be due to the irritant dust, a tub bath is often advisable. After washing the skin, a short soak in a colloidal bath will give considerable relief from itching. A simple but effective colloidal bath can be prepared by the use of one pound cornstarch and one-half to one teacup of baking soda in one half tub of cool or lukewarm water.

Any cleansing procedure serves two purposes, (1) further skin irritation is prevented, and (2) absorption of poisonous substances thru the skin is prevented.

2. *Local applications*: Bland preparations, such as compound calamine lotion, N. F., calamine liniment (for use on dry skins), boric acid, and Burrows solution should be kept available at all times. The calamine compound will relieve pruritis; cool soaks and/or wet dressings with boric acid solution (two teaspoonsful per pint of cool boiled water) or Burrow's solution (1:15) will reduce edema as well as pruritis.

Avoid painting an eruption with gentian violet or other dyes which may obscure the diagnosis, until after the patient has been seen by the physician.

If the eruption is extensive or presents severe exudation, hospitalization is advisable.

B. THE SECOND duty of the industrial nurse is to send the employee to the plant physician or consulting physician, as the case may be, for diagnosis and instructions on further care. In many cases consultation with a skin specialist, if one is available, will save lost time. The diagnosis is the physician's, not the nurse's problem. Many non-occupational skin conditions may simulate an occupational dermatitis. For example, a fungous infection of the hands, or dermatophytid of the hands associated with "athlete's foot," poison ivy, or some other plant irritation, heat rash, or irritation from cosmetics (including nail polish) may present an appearance almost identical with that of an industrial chemical dermatitis. German measles may be mistaken for a "powder rash." Although you may learn to recognize certain common occupational irritations in your particular plant, it is unwise to venture a diagnosis in front of the employee.

Frequently patch tests are necessary to establish the correct diagnosis. The common technic of patch testing is briefly: the suspected irritant, covered with a piece of moistened gauze if dry and then a circle of cellophane, is applied to the skin by means of an adhesive patch. The patch is left on 24 to 48 hours, depending on the substance and the patient's reaction. Reactions are observed at 24 to 48 and 72 hours; sometimes longer. Patch tests should be applied, removed, and interpreted by the physician. Proper

interpretation is often difficult; tests should not be applied indiscriminately, since a test can, in certain cases, make the eruption worse.[5]

It is necessary also to distinguish between primary irritants and secondary irritants. "When a substance in a given concentration, in a given vehicle and in a given manner and length of exposure produces a clinically manifested irritation on the skin of a majority of persons not previously sensitized to that substance, that substance is a primary irritant under the specified conditions. This irritation may be redness, papulation, vesiculation, ulceration or other signs of damage at the site to which the substance has been applied."[2]

By contrast, substances which produce reactions *only* on the skin of persons who are hypersensitive to that substance are considered secondary irritants. A sensitizing agent is one which increases the capacity of the tissue to react to subsequent exposure.

C. THE THIRD function of the industrial nurse is to help see that the employee does not again become exposed to the irritant in question until it is considered safe by the physician. Some workers will return to their regular job in spite of advice to the contrary by the physician, and this can be very dangerous.

Prior to the war, it was customary procedure to take the employee off work altogether until the dermatitis had entirely healed. Now, realizing the great need for keeping everyone on a job of some kind as much of the time as possible, an attempt should be made to keep the employee with a dermatitis on some sort of work if his medical condition permits it and provided that a suitable job is available. If the eruption is extensive or generalized, this is usually not feasible. If the eruption is confined to certain parts which can be fully protected, some work may often be done without harm. This is a ticklish problem, and often a hard decision to make. The employee's health and the medical condition present deserve first consideration so that healing and rehabilitation will not be delayed or jeopardized. The decision should be made by the physician, who, in turn, should be familiar with all operations in the plant and who should be given full cooperation. A smoothly working transfer procedure in such cases will benefit all parties concerned.

Whether the employee should be permitted to return to his old job (during treatment) or after the eruption has healed, depends entirely on the individual case and the exposure involved. Workers in TNT, for example, can often continue on the same job; whereas those who develop a sensitivity to some other explosive powder, such as tetryl, frequently have to be removed from all contact with it, at least temporarily. This decision should be left up to the physician.

Conclusion

I WOULD like to emphasize that, in view of the high incidence of occupational dermatoses in our industries and considering the vital role played by the industrial nurse in all plants, *her* opportunity to render important and essential service in this field is greater than ever before. I feel sure that this opportunity will be met successfully by all of you.

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Optimum Use of Nursing Service

—In the War Effort—

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A SHORTAGE of industrial and public health nurses and an excess of industrial and public health problems constitute a wartime situation demanding critical appraisal of how the time and energy, the skill and intelligence of nurses may best be utilized. With a civilian population of nearly eight million and an industrial population of nearly three million, California now has approximately one industrial nurse for every 3,500 workers and one public health nurse for every 4,500 persons—far below the recommended ratio of one industrial nurse for every 500 workers and one public health nurse for every 2,000 persons. But this is not the worst of it. Industry *must* employ additional thousands of workers during the coming year. At the same time, California must furnish 2,160 nurses to the armed forces, that is, each month 180 nurses must be drawn from already depleted hospital staffs, industry, and public health agencies.

Not only must the nurses already in the field care for more people, but also they must contend with more severe problems in the working environment and in the community. Therefore, unless we wish to invite trouble, we must examine the way we are using our nurses now, in order to discover the measures necessary for their more efficient use.

We must make optimum use of this limited amount of available and gradually decreasing medical and nursing service. It is imperative for the winning of this war that we have maximum production of all commodities. To do this, we must keep every individual in the best possible physical and mental condition. This is not limited to the individual worker, but to every infant, pre-school child, school child, and adult, for illness on the part of members of the family results in a worried worker or causes absenteeism, with attendant loss of production.

How can the industrial physician and the industrial nurse plan their program for optimum use of their skilled services?

The answer, I believe, lies in the analysis of their services, program planning, delegating duties for which the physician's skill is not necessarily required to the nurse, and delegating duties for which the nurse's skill is not required to trained helpers or nurse auxiliaries.

This is not a new or radical procedure. The armed forces have long had this method in effect. The pharmacists' mates in the Navy and the enlisted medical corps in the Army perform the nurse auxiliary duties, under supervision, of course, and they are guided by standard policies and procedures.

Standardized policies and procedures are known by the industrial nurse as standing orders. They are written and signed by the licensed physician responsible for the medical service in a particular industry.

It is the responsibility of the industrial physician to know the abilities and capabilites of the industrial nurse who is under his direction and to protect not only the employees and management, but also the nurse, by issuing compre-

Presented at the Annual Meeting of the WESTERN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, Biltmore Hotel, Los Angeles, California, April 29, 1943.

hensive and effectual standing orders.

Too frequently industrial nurses are saying concerning their physicians on call, "He says standing orders are not necessary—use your own judgment." When a registered nurse uses her own judgment in treating and redressing injuries, she is practicing medicine. She is flirting with medicolegal troubles. If she is summoned to court trial for irregular treatment of an injury, is the industrial physician willing to appear in court and testify to the effect that he is responsible and clear her of all guilt? Standing orders are a protection for the industrial physician and the nurse. Every industrial physician should see that his nurse has them.

Industrial nursing services have been and are being misused. The nurse has performed duties an unskilled person may perform as well, and, in many instances, better than the nurse. Consider these few examples of misuse of nursing service—clerical work, answering the phone to receive and list absenteeism calls, inspection of rest rooms, standing at the physician's elbow to hand scissors or adhesive tape, ordering supplies, cleaning and issuing protective equipment, such as masks, goggles, gloves, and the like. The most serious misuse is truancy calls to determine the cause of absence, and there are many more.

May I enumerate a few of the duties you may delegate to the nurse and the nurse may delegate to the nurse auxiliary worker?

A nurse auxiliary may assist the physician or nurse by removing dressings, the handing of instruments and supplies to physician, and the ordering and maintaining of supplies. The physician's and nurse's skilled services may well be conserved by the nurse auxiliary or clerical worker through interviewing the injured worker, recording the information relative to the accident, maintaining the injury and illness records and reports, and receiving reports of absenteeism by phone. Likewise, the nurse auxiliary may instruct the injured workman on safety practices at the time treatment is given.

The safety department or nurse auxiliary may maintain and issue safety equipment, change posters on the bulletin boards, perform duties associated with the plant disaster activities, and do the rest-room and lunch-room inspections.

Health and occupational histories, vision and hearing tests, and the chaperoning of women workers during physical examinations may well be duties of the nurse auxiliary. The group insurance program, for example, with its appalling amount of necessary record keeping should be handled by a clerical worker.

Exceptions to these duties which may be delegated to nurse auxiliary workers occur in the small plants having full-time nursing service where actual nursing skills are not completely utilized. Hence, in these instances, the nurse herself may perform some unskilled duties, which would otherwise be delegated.

From the aforementioned nursing duties, you will admit that many industries are not making optimum use of medical and nursing service for the war effort.

We have the worker eight to 10 hours of the 24, the community has him the remainder of the time. We must use all available community facilities for maximum health and welfare for our industrial population, and in many instances instigate the development and expansion of community health and welfare facilities.

It is the duty of every citizen to do all within his power to improve the conditions under which men work and live. The citizen who cooperates in the organization of industrial and community services so as to afford to the largest number of workers the greatest opportunity for self-development and the enjoyment of those benefits which their work adds to the winning of the war, and is the citizen who renders the greatest social service at this time. We can, we must, make optimum use of nursing service in the war effort.

Duties of Nurses in Industry

THE INDUSTRIAL expansion occurring throughout the United States and the increasing understanding of the importance of the health of workers made necessary some consideration of the factors influencing the development of an industrial nursing program. For this reason the Public Health Nursing Section of the American Health Association at its 1940 Annual Meeting authorized the appointment of a special committee to be known as the Committee to Study the Duties of Nurses in Industry. This committee became active early in 1941 and planned a nationwide industrial nursing survey. Such a survey was to serve as the basis (1) for determining the range of nursing activities included in all types of industrial nursing services, (2) for formulating a statement of recommended practices in industrial nursing and (3) for defining the current problems confronting nurses in industry. . . .

The ADVISORY GROUP, organized on recommendation of the committee was made up of representatives of organized groups of industrial nurses throughout the country. In some areas where the industrial nurses were not organized a well known industrial nurse was invited by the committee to serve on the Advisory Group.

The functions of the Advisory Group were (1) to assist with the planning for and the conduct of the survey and (2) to prepare recommendations of acceptable practices of industrial nursing based on the survey findings. . . .

The committee was successful in obtaining completed schedules on 924 industrial establishments employing approximately 2,500,000 workers and located in 36 states and the District of Columbia. The information was collected through personal interviews with the plant nurse or other plant official by consultant nurses in the divisions of industrial hygiene, by staff nurses in several state departments of public health nursing, and by committee members. The survey was begun in March, 1942, and continued through December of the same year. . . .

Having analyzed the survey information, the Advisory Group recommended that:

NURSES working without the direction of a full-time physician should have written standing orders. Where no one physician is responsible for the plant medical service, the nurse may secure standing orders from the committee on industrial health of the county medical society. Further, the nurse working under the direction of a full-time physician should have written procedures for her guidance. In plants where nonprofessional workers are employed, written standing orders and/or written procedures should be furnished for the guidance of such personnel.

WHERE two or more nurses are employed, one nurse be designated as one of the following, depending upon the size of the nursing staff and the amount of responsibility delegated to her: director of nursing service, nursing supervisor, chief nurse, head nurse, or charge nurse. Further, when the nursing staff of the particular industry is not sufficiently large to warrant the employment of a nursing supervisor, the facilities for advisory service offered by the state department of health or the insurance company should be utilized.

THE MEDICAL department, regardless of size, should be responsible to an executive of the organization.

NURSING assistance in the medical examination, both pre-placement and other types, should include the following activities: (1) interviewing the worker previous to the examination; (2) doing routine tests and explaining their significance; (3)

From *Public Health Nursing*, July, 1943.

taking specimens for serological and other laboratory examinations and explaining their significance; (4) interpreting to the worker plant policies regarding health and welfare and his responsibility for cooperation; (5) making periodic inspections for symptoms and indications of occupational diseases; and (6) making inspections and interviewing workers in connection with return-to-work permits.

THE NURSE have special training in the technics of rendering each of these services (laboratory work, x-rays, physiotherapy treatments, electrocardiograms, metabolism tests) when they are required of her. However, when the volume of special technical services requires the time of one individual, a technician rather than a nurse should be employed.

THE NURSE'S participation in the plant health education program be extended and improved. Such a program should include definite plans for: (1) follow-up for correction of remediable conditions; (2) supervision and rehabilitation of workers with adverse health conditions; (3) maintenance of complete records showing care given for non-occupational conditions; (4) health teaching in the training program; (5) utilization of community resources including private physicians, health and welfare agencies.

NURSES in industry take the necessary steps to become authorized Red Cross home nursing and first aid instructors.

THE NURSE should not be responsible for the planning or direction of the safety program but that she assist in the following activities: (1) proper placement of workers according to physical and mental fitness; (2) teaching the training course; (3) safety committee work; (4) record and report keeping; (5) individual instruction of workers regarding accident prevention; (6) visual education, movies, posters, and printed material; and (7) distribution and care of protective equipment.

THE NURSE show an active interest in all phases of plant environment that affect the health and morale of the worker. However, direct responsibility for the supervision of plant sanitation should be delegated to other departments whenever possible.

NURSES participate in and promote welfare activities. The nurse's participation may include: (1) development of group sick benefits, hospitalization, and life insurance plans; (2) personal counselling with workers regarding welfare problems; (3) development of recreation program; (4) cooperation with local welfare agencies; (5) planning of cafeteria, lunch-room and canteen services.

HOME NURSING service be provided by the plant. The plan for visiting sick or injured workers in their homes should be developed to secure maximum benefits to the workers and to the plant. Employment of nurses for this service may be necessary where community resources are not available or cannot be coordinated with company policy.

THE MEDICAL records be kept strictly confidential except as interpretations of them are needed by management; (2) all medical records be kept in the medical department and available for use each time a worker presents himself for care; (3) when the physical examinations of workers are made outside the plant, the records or copies thereof be made available to the nurse; (4) clerical assistance be provided in order that the nurse's time may be conserved and records adequate. Further, the following types of records and reports are needed: (1) daily record or log; (2) individual record, including the medical examination, clinical visits, and the correction of remediable conditions; (3) disability absentee records; (4) compensation records and reports; and (5) monthly and annual reports to management.

NURSES for industry be obtained through professional nursing channels such as: (1) registries approved by local or state nurses' associations; (2) nurse placement services; (3) schools of nursing and universities offering courses in industrial hygiene; (4) insurance companies; and (5) divisions of industrial hygiene in state departments of health. It was further recommended that the local industrial nurses group act in an advisory capacity to the above organizations in regard to the needs of industry and nurses who are available.

INDUSTRIAL nursing organizations make an effort to encourage the employment of nurses who have had the industrial nursing preparation which is available at the present time.

A JOB ANALYSIS be made to depict the responsibilities involved in the particular position and that the salary be commensurate with these responsibilities.

STAFF NURSES who are eligible for military service and who may be replaced by nurses not eligible for such duty should be encouraged to enroll for service with the armed forces and should be granted military leave.

NON-PROFESSIONAL clinic assistants be employed in so far as possible, and that the following duties be assigned to them: (1) securing of specimens and care of specimen bottles; (2) filling of hot water bottles and ice bags; (3) bed making; (4) sterilization of instruments and supplies; (5) assistance with dressings; (6) making surgical supplies; (7) care of change rooms, rest rooms and toilets; (8) training of matrons. It was further recommended that there by written instructions governing the activities of the non-professional clinic assistants and that such assistants be supervised by the nurse.

THE NURSE'S activities be limited to those of the medical department.

THERE BE one nurse for up to 300 employees, two or more nurses for up to 600 employees, and three or more nurses up to 1,000 employees, one nurse for each additional 1,000 employees up to 5,000, and one nurse per each additional 2,000 employees. Additional nurses may be required because of hazards present in a particular plant and to supply service for second and third shifts.

THE USE of part-time nursing service should be extended, particularly in plants employing less than 100 workers. It was further recommended that local industrial nursing organizations cooperate with the state industrial hygiene divisions in giving guidance to individuals or agencies which may be utilized in providing such services.

Routine in a Small Plant

—A Nurse's Annual Report—

THE following comments and tabulations are from the Annual Report of the First Aid and Industrial Relations Department of a manufacturing plant which, during 1942, the year covered by the report, had an average of 279 employees. This report was prepared and submitted by the company's industrial nurse:

WE HAVE recorded the total of 1,991 accidents. These terminated in 1,935 injuries; 194 of these injuries —despite all our vigilance and insistence on the necessity of wearing goggles—were due to foreign bodies in eyes. As usual our worst offenders are our new employees. Thirty-three of these eye cases had foreign bodies embedded and were referred to oculists; 161 were cared for in the department.

Fifty-nine cases were referred to doctors for surgical treatment; two cases to dermatologists; nine for x-ray. The latter cases proved to be negative, which is always satisfactory to the employee and the department.

Fifteen compensable cases were paid for lost time; seven persons lost time minus compensation because they were not out a full week or more than one week. We had a total, therefore, of 22 lost time cases. (See Tables I and II.)

Ordinary compensation, paid to 15 persons, was $1,272.94. Extra compensation was awarded in one case for permanent partial disability; (9.5 weeks were awarded to this man) amounting to $235.00. The medical costs on these compensation cases were $1,216.96, and thus the total paid to date on these cases is $2,724.96.

This total does not include four cases of partial disabiilty, because the

amount has not been determined at present. This, however, will be a substantial amount, probably reaching several thousand dollars.

Since 1918, including 1942, in our department, we have cared for 13,360 injuries without one case of infection. We are proud of this record.

We have tabulated the various types of employment of our men previous to their being employed in our plant. The frequency and severity rates of their accidents are shown in the accompanying tables.

Twenty persons were advised to consult their own doctors for troubles that we suspected required diagnosis and medical care. The doctors as usual are always very glad to cooperate with us, not only in reporting their findings, but also—if they think the persons need follow-up care—in turning them over to us to use our own judgment as to sending them back for further treatments. One person was requested to come to us for his pollen extract for hay-fever. To date we have given this man 44 hypos, as per his doctor's orders.

Our Red Cross First Aid classes carry on their monthly practice in order to keep up to the minute.

We started a Red Cross Home Nursing course, Tuesday, April 27, which we hope will help our employees to care for their families in case of emergency need.

Our blood donors are most enthusiastic and are anxious to contribute their share. Many are making their third trip to the blood donor centers.

Having read so much in the papers about malnutrition in many factories, we were amazed on returning to our plant after several weeks absence to note the increases in weight in our men that we contacted. As a matter of fact we were so interested that we began to ask questions, and we weighed a number only to find that they had gained from 10 to 20 pounds, also that many of the new men employed while we were away had gained in weight since coming into our plant. Two men had increased their weight 25 pounds and were found to be partaking of too much starchy foods. This has been corrected. The health habits of all persons were good. Most of our employees drink about one quart a day, eat good hearty meals at night and, after a smoke, read the evening paper, listen to the radio, and go to bed early. Asked what they did for amusement in the evening—"Go to the movies?"—the answer almost invariably was "No. We are too d—— tired to step out." Although some had gained in weight, none had lost weight. In addition to working here, several are working at outside jobs when their day is ended here and apparently they are none the worse for their self-imposed double duty.

Two men we thought would never put on weight have done so—one after extraction of his bad teeth, and the other after excision of his tonsils. Both appear to be in the pink of condition.

Regarding Table VIII, Reasons for Leaving Plant, during 1942 we had the heaviest labor turnover in our history. No doubt this condition is also found in many other plants. The period of work in our plant varies from two weeks to one year. As compared with the large number of resignations in 1942, there were 34 in 1941, and two in 1940.

Table VI indicates that we found several dozen occupational histories among the employees who began with us in 1942. This has a direct bearing on the increase in accidents during that year.

[ON ACCOUNT of space limitations, certain of these tables are indicative rather than complete. They will be more fully set forth in the separate reprint of the articles in this number of the INDUSTRIAL NURSING SUPPLEMENT to be issued later—Ed.]

TABLE I.

Average number of employees	279
Total man hours worked by all employees	714,072
Number of accidents resulting in lost time injuries:	
Death and permanent disability cases	0
Permanent partial disability cases	3
Temporary disability cases	19
Total	22
Number of days lost as result of accidents listed below:	
Death and permanent disability cases	0
Permanent partial disability cases	117
Temporary disability cases	272
Total days lost	389
Frequency rate (number of injuries per 1000 hours worked)	21.1
Severity rate (number of injuries per 1000 hours worked	.558

TABLE III.

LOST TIME—FACTORY, 1942.

	Persons	Days
Compensable cases	15	389
Compensable—temporary, minus compensation	7	
Totals	22	389
RESPIRATORY INFECTIONS:		
Common cold	22	54
Grippe	18	88
Bronchitis	2	22
Pneumonia	2	56
Totals	44	220
LOST TIME FROM OTHER CAUSES:		
Arthritis	1	32
Athlete's foot, and hands	1	24
Diarrhea	3	10
Neuritis	1	13
Diabetic condition, chronic	1	26
Sore throats	3	8
German measles	1	5
Chronic heart trouble	1	37
Operations	2	88
Neurotic, per his doctor	1	6
Totals	15	249
Home injuries	3	56
REASONS FOR ABSENCES:		
Weddings	7	29
Births	1	3
Funerals	2	20
Illness in family	2	24
Car trouble	4	4
New Year's day off	10	10
Short trips	7	23
Seeing men off to service	2	6
Decoration Day off	2	5
Suspect drinking—days off from time to time	1	32
Totals	38	156
NO APPARENT REASON FOR DAYS OFF:		
Men	174	576
Women	33	39
Totals	207	615
Total Lost Time		1,685
Sum total days off, including office		1,970.5

TABLE II.

	Days Lost
Standing on wooden box, moving bracket to fit piece. Box moved and man fell against splash guard, causing a left inguinal hernia	47
Drilling oil press cups which had rough edges, the drill slipped and the oil cup press hit man's arm, causing deep laceration inner aspect right wrist injuring a nerve	22
Lifting a heavy steam ring, felt lame afterwards. Sacro-iliac strain	15
Operating Bullard machine, the clutch was not properly tightened, it slipped and handle of side head flew back striking man in lower left side of abdomen	17
Caught trousers on a bolt sticking out of valve on a machine. Man started to fall and braced himself and hit right knee on the machine	9
To change position of casting slightly, was using a lever rod. Wooden prop under cover slipped to one side and the casting cover fell from about two inches on tip of left great toe. Lacerated toe	28
Was standing on hand rope with right foot, as he was taking chuck from truck, the hemp rope broke, curved part of chuck came down on foot, causing a comminuted fracture of right toe	43
Passing testing department; machine was being tested; valve on pipe was stopped up and, as opened up to spray asbestos with live steam, the live steam hit man, scalding right arm and side of body. Third degree burns	8
Reading blue print, pulled chain toward him to bring blue print nearer, did not see parallel bars piled up there, one bar fell striking outer side right ankle and foot. Sprained ankle	7
Shoveling snow for five days in side yard. Sustained an acute lumbar strain	21
Poor soles on shoes of right foot, stepped on a sharp chip and incised sole of right foot	7
Going to call welder, welder's cable got tangled on valve, which rolled over on top of foot, fracturing left great toe	25
Went to light boiler. Flame back fired, owing to neglecting to open damper. He was a bit tipsy at this time. Third degree burns on arms and right hand	21
One case dermatitis. Probably due to susceptibility to oil. New man	9
Left machine running to get drink at fountain; another worker got there first. As patient was anxious to get back to his machine, he pushed the other worker aside, the worker started to fall and, in preventing him from falling, a pile of valves nearby fell on patient's hand, causing a compound fracture of second metacarpal bones of left hand. Owing to faulty results of this fracture he has had to undergo a second operation. Apparently he is doing well but will be allowed extra compensation owing to partial disability. This patient has been out of work since September 12, 1942	95
(Cost of this case to December 31, 1942, is as follows: Compensation $250.00, Medical $174.00; Total $424.95, which does not include cost to date May, 1943.)	
Brushing off table, preparing to put wheel on machine. Wheel tipped over on top of left foot	1
Jaws holding diaphragm not tight enough; diaphragm slipped out, striking top of left foot. A fracture, head of left great toe without displacement	2
Trying to lift 250-lb. casting, pulled hard and strained deltoid muscle	3
Getting casting off truck in stock room, about half way down ladder handing stock to another worker, ladder was oily on rungs and patient slipped falling backwards hitting full length of back against rack of stock on floor behind her. Strained triceps muscles	3½
Hammering loose handle of another hammer. Handle broke off, causing foreign body to enter right eye, embedded foreign body causing hematoma	1
Stepping off plank, struck right knee against nail keg which was standing nearby. Abrasion right knee	1
Total compensation costs	$2288.65

TABLE IV.
ACCIDENTS

	Re-checks
FEBRUARY	
10—Complaint of right wrist hurting when twisting and picking up glands. Strapped, and restrapped on the 11th. Feels OK.	2
21—Reported on the 23rd. Was grinding gauges, fellow beside him was grinding tool. Felt something fly into eye from the other man's job. Negative for f.b. Boric wash. OK on the 24th.	1
MARCH	
5—Had twisting job all day. Right arm lame below elbow. Possibility of lame muscles. Strapped. Now OK.	1
6—Working on speed lathe, felt something get in right eye. Negative for f.b.	1
17—Right wrist lame from working on reverse chambers. Strapped. OK.	1
17—Suspected sliver in right thumb tip palmar side.	1
APRIL	
2—Split nail—slight crack seen.	1
2—Small particle under right index finger.	1
4—Steel particle, right thumb, from bucket.	1
5—Dust particles in left eye.	1
5—Particles in left eye.	1
21—Wood sliver in right index finger.	1
22—Sawdust in left eye.	1
MAY	
1—While taking steam traps off pipes last night, hit elbow with hammer. No bruise or any sign of injury.	1
2—While grinding, chip got in right eye.	1
6—Walking through grinding department in tool room, felt foreign body right eye.	1
11—Walking through grinding department in tool room, felt something in right eye.	1
12—Working in grinding department in tool room, felt something in left eye. Boric wash.	1
14—Dropped shaft on right foot. Struck foot (toe of shoe), rolled back on foot. Felt sore walking last evening. Used magnesium sulphate foot bath. OK today.	1
14—Tripped in department and, in falling, hurt back (night shift). All right since.	1
27—Sliver right palm. Felt better after cleansing spot.	1
28—Felt chip hit inner corner of right eye.	1
30—After taking inventory and standing all day on ladder, leg feels lame. Strapped.	1
JUNE	
2—Closing window, at noon, felt something in left eye. Boric wash. OK reported at 1 P.M.	1
6—When grinding on 5th, 5:30 P.M., felt something in left eye. Felt scratchy in morning. Negative for f.b. Boric wash. OK	1
6—Using heavy wrench on hard tightening job all day. Later in the day, as he braced body backwards, felt discomfort in right abdomen muscles. Three days later felt all right.	1
6—Was using heavy pipe wrench all day, tightening job. Saturday evening felt discomfort when taking a deep breath, muscles felt sore and tired. Reported on the 7th OK. No apparent injury.	2
17—Reported in morning—felt foreign body in left eye. Nothing foreign seen, outer side of sclera inflamed, Boric wash. "Feels better."	1
29—Sawdust left eye. Washed out with tears?	1
29—Lifting heavy casting, felt strain in left upper thigh. Uncomfortable when walking. Advised rubbing. Better next day.	2
JULY	
1—Wrench slipped; struck right index on casting. First joint sore to move. OK on 7th.	1
6—Felt foreign body left eye. Probably washed out with tears.	1
6—Raised goggles to forehead, felt something in left eye. Nothing seen.	1
14—Filling in yard with crushed stone, felt something in right eye. Perhaps washed out with tears.	1
17—Setting up machine, felt something in left eye. Negative.	1
24—Hard oil got into left eye. Negative.	1
25—Grinding, and when raising goggles thought something got in left eye. Negative.	1
30—Grinding (wore goggles) something got into left eye. Boric wash. OK.	1
AUGUST	
1—Reported dust right eye. Negative.	1
11—Banging piece of iron, piece chipped off and flew hitting right eye.	1
13—Eyes feel scratchy. Does not remember anything getting into eye. Boric wash. OK.	1
17—Right eye feels scratchy. Suspects dust from blowers being used by fellow worker. No f.b. seen.	1
21—Dust from blower blew into right eye. Negative.	1
SEPTEMBER	
9—Left eye irritated. No foreign body noted.	1
19—Right eye scratchy and irritated. Negative. OK.	1
24—Setting up wheels, one toppled over and hit left index finger. Felt numb at tip, otherwise OK.	1
OCTOBER	
12—Reported dust in right eye. No dust seen.	1
12—Thought something flew in eye from grinding.	1

TABLE V.
REPEATERS

New Employees	Times	New Employees	Times
1	19	1	16
1	19	1	20
1	32	1	32
1	29	1	12
1	26	1	21
1	26	1	12
1	33	1	12
1	24	1	13
1	27	1	27
1	20	1	12
1	32	1	11
1	15	1	14
1	15	1	16
1	16		
1	14	Women Employees	
1	14		
1	18	1	17
1	17	1	15
1	18	1	16
1	18	1	23
1	13	1	15
1	14		

TABLE VI.
PREVIOUS EMPLOYMENT

Woolen mills	1
Granite quarry	1
Carpenters	2
Dry cleaners	2
Grocery stores	2
Salesmen: bond-shoes-clothes-furniture	4
Upholsterers	2
Trucking	2
Farming	3
Milk route	1
Dishwasher	1
Bus lines drivers	2
Drug stores	2
Embalmers	2
Auto mechanic	1
Hairdresser (male)	1
Insurance clerks	2
Elevator operator	1
Construction worker	1
Manufacturing experience	28
Total	61

TABLE VII.
LOST TIME—OFFICE, 1942

Reasons	Persons	Days
Personal	15	15
Sore throats	3	12.5
Colds	10	29.5
Grippe	3	24
Sinus	1	5
Home accidents	2	152
Observation in hospital	1	13.5
Yom Kippur	1	3
Illness in family	4	24.5
To marry	1	5.5
Total	41	284.5

TABLE VIII.
REASONS FOR LEAVING PLANT

Army	6
Navy	5
Marines	3
Air Corps	2
Coast Guard	2
In Service	18
Resignations, etc.:	
Discharged for drinking	8
Incompetent to do our work	5
Dissatisfied with work	5
Dissatisfied with being a helper	1
Did not like night work	2
Did not like to sign waiver	1
Did not like noisy factory	1
Did not like factory work	1
Sea-sickness on crane	1
Back to his market	1
Involved in a robbery	1
Janitor job paying more	1
Timekeeper	1
Government job in Washington	5
No reason given	25
Went to other plants	34
Resigned from office	4
Total Resignations	97

TABLE IX.
SUMMARY, 1942

First aid injuries	1,681	
First aid injuries, eyes (Loose f.b.)	161	1,842
Doctor cases, surgical	45	
Doctor cases, eye cases—oculists	33	
Doctor cases, x-ray negative	13	
Doctor cases, occupational dermatitis	2	93
Total injuries		1,935
Total accidents reported		1,991
Redressings on injuries		1,498
Home injuries, minor nature		81
Redressings on home injuries		339
Dispensary minor ailments		596
Social service		69
Furuncles and redressings		53
Outside men of other companies hurt while working in plant here		7
Home calls		29
Total calls to department		4,345

	Average No. Employees	Hours Worked	Reported Injuries	Disabled Employees	Days Lost Compensable	Frequency Rate	Severity Rate
1938	181	282,188	478	2	29½	7.08	.104
1939	173	263,182	421	4	21½	15.2	.082
1940	191	394,144	596	4	98	10.18	.249
1941	209	485,326	850	3	156	6.18	.322
1942	279	714,072	1,935	15	397	21.1	.588

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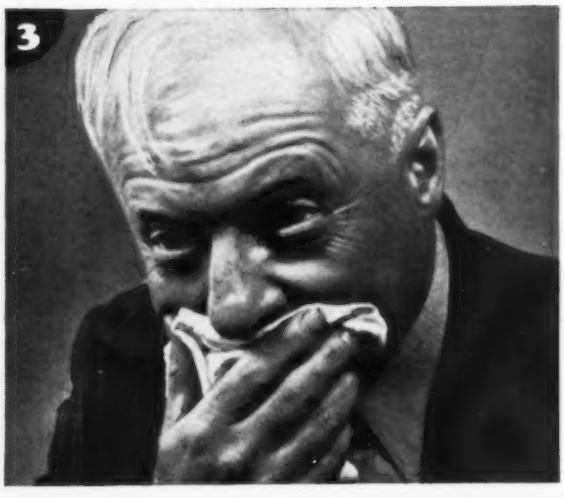

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